The Scientific American Supplement Index for Vol. 81

JANUARY-JUNE, 1916

THE * INDICATES THAT THE ARTICLE IS ILLUSTRATED

A	Briquetting material, new 32 Bronze, aluminium 38	mechanical properties of steel 307 Corrosion, physical and mechan- ical factors in	Elephants, the king of°225 Emulsification and emulsions119 Emulsions and emulsification. 119	Gasoline from natural gas 187 Gear, ingenious electric drive *76 Gasoling asymptotic electric drive *76
Acetylene, action of, on metals. 11 Aerial torpedoes	Bronzes, metallographic de- scription of ancient Peruvian 142 Building construction, clay	Cosmology, Babylonian 346 Co-operation in foreign trade 118	Engineering, business in 275	Gearing, synchronous*389 Gears, new system of cutting*101 Gelatine as food for people 167
Aeroplane, development of military	Bullet, noise of a 4	Current (alternating) single- phase induction motor *92	Engineering education, our modern	Gems, how to value 334 Gems and microspectroscope 39
Aeroplanes, steam power 350	Bullets in human bodies, lo- cating*369	Currency in China	Engineering in the navy 245	Genuine, imitation as pioneer of 121
Agriculture in France during	Burning limestone, quality of 183	Cutters and the war	Engineering problems, differentiator for	Genus allium, antiquity and utility
Agriculture, nature study in 22 Aiming with the rifle	Business in engineering 275 Building operations, handling concrete in		Engineering work, a notable. *257 English measures of length 125 Enlarging and projection ap-	Geodetic and coast survey (U. S.) and commerce
Air and atmospheric fog, radio- active substances in *37	Blindness, concussion 175 Buenos Aires trade-marks con-	D .	paratus, new*357 Etching mild steel, reagent for 238	Geological Survey Museum, Ottawa 1, 146; II, 170 Geological Survey Museum, 232
Air, fighting in the	vention	Dam, building a big earth *1 Dandelion, the*308	Encalyptus oil industry, Call-	Ottawa
Air, unnoticed pollution of the 169 Aircraft, repelling attacks of *17 Airships, dropping bombs from *251	By-products of gas manufac- ture	Dangers of rubber manufacture 281 Daylight (artificial) for micro-	fornia	health 205 German food supply 303
Airships: rigid, semi-rigid and non-rigid*356		Deformation of steel on quench-	Evaporator, a novel 295 Evolution in shipbuilding.	German copper substitutes 9 German monopoly of nitrogen 392
Airships, throwing bombs from *85 Airships, Zeppelin	C	Depolarization in Leclanche	I, 130; II, 151 Experiment station, U. S. Naval	"Ghost lines" in steel castings 239 Glacial deposits, wood in*156
Airships, Zeppelin. A correction 112 Alcohol in war	Cables, field*276 Calcium sulfide and light 392	Destruction of historic edifices,	engineering*72 Explosibility of gases from mine	Glaciers, some American*273 Glass, for culinary ware 263
Allium, genus, antiquity and utility	Canadian water powers *49	Detonation of submarine mines by electricity*253	Explosion, boiler, in Germany, 148 Explosion, old boiler, theory 59	Glass, some notes on optical. 86 Good roads and the automobile.*376 Golf clubs, wood for 185
Alloy of nickel and tantalum 287	Calcium sulphide, phosphorescent	Developer for black and white	Explosives, cellulose for 111 Explosive shells, cast iron for. 55	Golden rod
Alloy, valuable	Calendar, the Chinese	Development of military aero- plane*364	Explosives, their history and	French hospitals
Aluminium bronze	life processes	Development of military small arms	Extension of human life 291 Extension of species 293	Grape ripening, chemistry of 259 Gravitation at the earth's center 201
Aluminium electric cables, re- inforced	Calendar (simplex) a correc-	Developer, regenerating hydro- quinone	Eye, blind spot of the	Great Lakes, ore unloading on *97 Grenades, English rifle*197
Aluminium, nickel plating 283 Aluminium, protecting metals	Camphor, artificial	Diesel engines in Germany 339 Differential, development of au-	ments	Grenades, rifle and hand *84 Gulf oil field, the
American built locomotives	Care of the feet*252	tomobile*268 Differentiator, a*190	Eyes, animals with many*244 Eyes, spots before the	Gun, an 18-inch
abroad	Carbohydrates and proteins 236 Cars, paint baking on steel 391 Cartridge cases, copper 83	Direct and high-angle fire 373 Disease, concrete 144	Education, our modern engineering	Guns, large naval and coast defense *241
Ammunition used in rapid-fire guns*209 Amorphous solids, chemistry of 382	Casualties, battlefield 201 "Case" ,or patient? 76	Disease of many forms—cancer 3 Diseases, school-spread of con-		
Anemometric paradox, an*108 Anemometric paradox, an 163	Casting, distortion of iron 115 Castings, non-porous alloy 131	tagious	F	н
Anglo-Egyptian Soudan, history of	Cast iron for explosive shells. 55 Cast iron, effects of sulphur in 323	warfare	Factors in corrosion 298 Fans, electric, in winter 272	Hand and rifle grenades *84 Hands, danger in shaking 388
Animals (wild) taking own pictures*236	Cells, systems concerned in living	Divination, tortoise-shell 57 Diving and diving apparatus. *341	Farm tractors	Handling concrete in building operations *164
Animals with many eyes*244 Annealing furnaces 283	Cellulose for explosives 111 Cells, depolarization in Le-	Dog's eyes, refraction and ac- commodation in. A correc-	Feet, care of the	Hard paper insulators 87 Hardness of metal, testing 186
Anti-chlor respirators	Cements and lutes	tion	Ferryboat, the largest gasoline *60 Fiber, a new textile; Kapok*113 Field cables, army*276	Hardwood distillation industry 10 Hawaii, the woods of
Application of chemistry by the municipality	Cement, Portland	working	Fighting in the air	Heads, racial
gases at reduced pressures. *29 Arc lamp technology progress. *380	transparency	Drift problems in optics 372 Drills, hardness of 269	Films, drying, for the movies. 160	Heart of the athlete
Armadillos, some remarkable*157	Ceratosaurus nasicornis, resto- ration of	Drive, 5,000 hp. chain 84 Drive gear, ingenious electric. *76	cury *24 Filters, sand 313	nace
Arms development of military	Chemistry of amorphous solids 382	Drop measuring liquids and suspensions method 399 Dropping bomb, scientific *260	Finding your way at night without compass*220	Health, public, and geological
Artificial limbs*328	Chemistry of grape ripening. 259 Chemistry (photo) 214	Drug plants, profits from 269 Dust, aluminium 301	Finishing wood surfaces 170 Fire, direct and high-angle 373	survey
Artificial seasoning of timber. 395	Chinese weights and measures. 198 Chemistry, application of, by	Dust, protecting motors against 139 Dust, the transport of material	Fire, rifle	Hedges, vine
Astronomy, new system of navi- gation and nautical*396 Astronomy, survey of sidereal. 66	the municipality	in form of	Flame standards in photo- metry	High-explosive shells*209 High bolling petroleum oils,
Athlete, heart of	photography	_	Flotation, oil and other re- agents in	High efficiency incandescent lamp
in Central Australia 311 Atom, marvels of the 114	problems	E	Floors, concrete workshop 349 Flora, plant chemistry 319	Historic edifices in Europe de-
Atom, the structure of:	Chain drive, 5,000 hp 84	Earth, The	Flower color	History of coal in U. S., notes
Atoms and electrons, radiation: I, *290; II, *306; III, *322; IV, *338; V, *354; VI, *370	Chemical faculties of plants 98 China, plants from 345 Chisel, an old world 311	Earth roads, oiling on 250 Earth, structure of the J, 162: II, 186	stances in	History (early) of Anglo-Egyp-
Attacks of aircraft, repelling of *17	Chinese methods of operating machinery	Earth's center, gravitation at 201 Earthquakes in California 356	Food for the people, gelatine 167	tian Soudan
Autobus in Spain	Citrus fruits, cull	Economics, food	Food supply, German people 303 Force, induced electromotive 103	Horizontal walking and energy 400
opment of	Clay products in domestic build-	Economy in study, I, 242: II, 274: III, 330; IV, 374; V, 410	Forestry, museums as aids to 297 Forestry, teaching scientific*289	Hospitals, what is done for wounded in*196 Hospitals, electric cook ranges
Automobile wheel, phenomena of a moving*215	ing construction 363 Clover, sweet 263	Edifices, destruction of historic, in Europe	Forms, calculations for ships', 182 France, agriculture in, during	in
Aviation sickness, symptoms and cure 357	Coal supply of New York City.*193 Coal, history of, in U. S 153	Education and preparedness 414 Education faults, engineering. 117 Efficiency of spectral colors for	war French life-saving helmet *4	Horn, cheap substitute for 9
	Coal fields of the United States. 287 Coal, new method of mining *12 Coast and geodetic survey (U.	lower organisms 144 Eggs, reducing our waste in*292	Frost, temperature in relation to*140 Fruits, utilization of cuil citrus 367	Human infection and rodent plague
В	S.) and commerce 279 Coast defense and naval guns,	Electric activity in ore deposits, L. 14: IL. 31	Fuel supply of hig power plant *193	Human life, extension of 291 Human requirements of fuel. 171
Babylonian cosmology 346 Bacteria, how first seen 156	Coatings for metals, protective 7	Electric arc in vapors and gases *29 Electric drive gear, ingenious. *76	Furnace, electric, vs. open hearth	Humanity, early groupings of. 346 Hydrogen, making compressed. 253
Bacteriology of wounds in war 58 Bacterial infection, protection	Coating for blue-print paper*333 Coating, non-conducting 180	from Sweden to Denmark*377	Furnaces, annealing 283	
Bagdad railway and European	Codes of the world, telegraph 266 Coke as a boiler fuel 137	Electric furnace, the Renner- felt ************************************	Furnaces, gas burner for laboratory*85	Too Intent book of feedow of 116
war	Commerce and U. S. coast and geodetic survey	Electric kitchen, world's larg- est*180 Electric lamp, man his own 341	G	Ice, latent heat of fusion of 116 Icebergs and ocean tempera-
Ballonet, the function of*347 Battery vs. magnet ignition 128 Batteries, electrolyte for pocket	Compass, finding your way at night without a	Electric locomotives, new idea in	Galvanizing processes in Ger-	tures
Pinceulars and telescopes mili-	Concrete disease	Electric motors, varieties of 249 Electric power in Alaska 181	many	Ink (printing) and printing
Blast furnace slag. Portland		Electric railway operation, suc-	Gardens, chemical*388 Garlic, juice in wound treat-	Ink and tracing cloth 101
	Consumption of shells 91 Construction of the heavens 66	cessful 336	Garlic, juice in wound treat-	Incandescent lamp, a high effi-
Baking paint on steel cars 391	Construction of the heavens. 66 Construction clay products in	cessful	Gas retorts, vertical 372	Incandescent lamp, a high effi- ciency*109 Indian music
cement from 203 Baking paint on steel cars. 391 Battlefield casualties 201 Bees, gathering food for. 167	Consumption of shells	cessful Electric sparks and gas mix- tures 227 Electric systems, control and protection 62	Gas retorts, vertical	Incandescent lamp, a high effi- ciency
Battlefield casualties 201 Bees, gathering food for 167 Blading, turbine 218 Blind spot, the 286	Consumption of shells. 66 Construction of the heavens. 66 Construction, clay products in building . 363 Concrete structures, modern. *161 Concrete in building operations, handling of . *164 Concrete, cement oll-mixed	cessful 336 Flectric sparks and gas mix- tures	ment 259 Gas retorts, vertical 372 Gas burner for laboratory furnace 485 Gas, gasoline from natural 187 Gas holders, novel construction for 119	Incandescent lamp, a high effi- ciency 109 Indian music 256 Industrial militarism 150 Industrial development of Japan 262 India paper, Oxford 149 Inflammability of gasoline and
Battlefield casualties 201 Bees, gathering food for . 167 Blading, turbine 213 Blind spot, the	Consumption of shells. 66 Construction of the heavens. 66 Construction, clay products in building 363 Concrete structures, modern. *161 Concrete in building operations, handling of *164 Concrete, cement oll-mixed Portland 1, 79; II, 90 Concussion blindness 175	cessful 336 Blectric sparks and gas mix- tures 227 Electric systems, control and protection 62 Electric truck troubles 393 Energy transformations during horizontal walking 400 Electrical universe 11	ment 259 Gas retorts, vertical 372 Gas burner for laboratory furnace 4 *85 Gas, gasoline from natural 187 Gas holders, novel construction for 119 Gas manufacture, by-products 75 Gas mixtures and electric 75	Incandescent lamp, a high effi- ciency 1109 Indian music 256 Industrial militarism 150 Industrial development of Japan 262 India paper, Oxford. 149 Inflammability of gasoline and gasoline vapor 203 Infection, relation of rodent
Battleneld casualties Bees, gathering food for. 167 Blading, turbine 213 Blind spot, the. 218 Blue-print paper, coating for 333 Boiler explosion theory confirmed 59 Boiler explosion in Germany 148	Consumption of shells	cessful separks and gas mix- tures 227 Electric systems, control and protection 62 Electric truck troubles 393 Energy transformations during horizontal walking 400 Electrical universe 11 Electricity in the field of war 60 Electrolysis and undergound piping systems 302	ment 259 Gas retorts, vertical 372 Gas burner for laboratory furnace 4 4 585 Gas, gasoline from natural 187 Gas holders, novel construction for 119 Gas manufacture, by-products 75 Gas mixtures and electric sparks 227 Gas store lighting device 163	Incandescent lamp, a high effi- ciency
Battlefield casualties 201 Bees, gathering food for 167 Blading, turbine 213 Blind spot, the 213 Boiler explosion theory confirmed 59 Boiler explosion in Germany 148 Body, telephoning from 85 Bomb dropping, scientific 260 Bombs, dropping from alrabips 251	Consumption of shells. 66 Construction, clay products in building 363 Concrete structures, modern. 161 Concrete in building operations, handling of 164 Concrete, cement oil-mixed Portland 17, 78; II, 90 Concussion blindness 175 Color, flower 251 Colors, spectral, for lower organisms 144 Collecting minute plankton 404 Copper refining in 1914. 151	cessful 336 Electric sparks and gas mix- tures 227 Electric systems, control and protection 62 Electric truck troubles 393 Enersy transformations during horizontal walking 400 Electrical universe 11 Electricity in the field of war 60 Electrolysis and underground piping systems 302 Electrolyte for pocket lamp batteries 179	ment 259 Gas retorts, vertical 372 Gas burner for laboratory furnace 4 4 187 Gas, gasoline from natural 187 Gas holders, novel construction for 119 Gas manufacture, by-products 63as mixtures and electric sparks 227 Gas store lighting device 103 Gas turbine, the 47 Gasea, action of, on iron and	Incandescent lamp, a high efficiency
Battlefield casualties 201 Bees, gathering food for 167 Blading, turbine 213 Blind spot, the 213 Boiler explosion theory confirmed 59 Boiler explosion in Germany 148 Body, telephoning from 85 Bomb dropping, scientific 260 Bombs, dropping from airships 251 Bombs, throwing from airships 251 Bombs, throwing from airships 251 Bombs, throwing from airships 251	Consumption of shells. 66 Construction, clay products in building 363 Concrete structures, modern. 161 Concrete in building operations, handling of concrete, cement oil-mixed Fortland 17, 79; 11, Concussion blindness 175 Color, flower 251 Colors, spectral, for lower organisms 144 Collecting minute plankton 404 Copper refining in 1914 151 Cooking ranges in hospitals, electric 277	cessful 336 Electric sparks and gas mix- tures 227 Electric systems, control and protection 62 Electric truck troubles 393 Enersy transformations during horizontal walking 400 Electrical universe 11 Electricity in the field of war 60 Electrolysis and underground piping systems 302 Electrolyte for pocket lamp batteries 179 Electrolytic iron 405 Electrolytic iron 405	ment 259 Gas retorts, vertical 277 Gas burner for laboratory furnace 4 4 187 Gas, gasoline from natural 187 Gas holders, novel construction for 119 Gas manufacture, by-products 263 Gas mixtures and electric sparks 227 Gas store lighting device 103 Gas turbine, the 47 Gases, action of, on iron and steel 160 Gases from mine fires, explose	Incandescent lamp, a high efficiency
Battlefield casualties Bees, gathering food for. 167 Blading, turbine 213 Blind spot, the. 218 Blind spot, the. 218 Boiler explosion theory confirmed Boiler explosion in Germany 148 Body, telephoning from . 85 Bomb dropping, scientific. 260 Bombs, dropping from alrabips*251 Bombs throwing from alrabips*85 Bone and skin grafting in French hospitals . 36	Consumption of shells. 66 Construction of the heavens 66 Construction, clay products in building 363 Concrete structures, modern 161 Concrete in building operations, handling of	cessful 336 Electric sparks and gas mix- tures 227 Electric systems, control and protection 62 Electric truck troubles 393 Enersy transformations during horizontal walking 400 Electrical universe 11 Electricity in the field of war 60 Electrolysis and underground piping systems 302 Electrolyte for pocket lamp batteries 179 Electrolytic iron 405 Electromative force, induced 193	ment 259 Gas retorts, vertical 277 Gas burner for laboratory furnace	Incandescent lamp, a high efficiency 109 Indian music 256 Industrial militarism 150 Industrial militarism 150 Industrial militarism 150 Industrial development of Japan 262 India paper, Oxford 149 Infiammability of gasoline and gasoline vapor 203 Infection, relation of rodent plague to human 199 Infection, bacterial, protection against 304 Infection, protection against bacterial 87 Infusorial earth for England 404 Insulators, hard paper 87 Insulators, hard paper 87 Insulators, hard paper 87 Insulation, testing 346 Invar and related nickel steels 383
Battlefield casualties Bees, gathering food for. 167 Blading, turbine 213 Blind spot, the. 218 Blind spot, the. 218 Boiler explosion theory confirmed Boiler explosion in Germany 148 Body, telephoning from . 85 Bomb dropping, scientific. 260 Bombs, dropping from alrabips*251 Bombs throwing from alrabips*251 Bombs throwing from alrabips*85 Bone and skin grafting in French hospitals. 36	Consumption of shells. 66 Construction of the heavens. 66 Construction, clay products in building 363 Concrete structures, modern. *161 Concrete in building operations, handling of *164 Concrete, cement oil-mixed Portland 1, 79; II, 90 Concussion blindness 175 Color, flower 251 Colors, spectral, for lower organisms 144 Copper refining in 1914 151 Cooking ranges in hespitals, electric 277 Copper substitutes in Germany 5 Copper, brittleness of annealed 339 Copper, brittleness of annealed 329 Copper captridge cases. 82	cessful 336 Electric sparks and gas mix- tures 227 Electric systems, control and protection 62 Electric truck troubles 393 Enersy transformations during horizontal walking 400 Electrical universe 11 Electricity in the field of war 60 Electrolysis and underground piping systems 302 Electrolyte for pocket lamp batteries 179 Electrolytic iron 405 Electromative force, induced 103 Electroms and atoms, radiation, 1 299: II 206: III 232:	ment 253 Gas retorts, vertical 372 Gas burner for laboratory furnace 583 Gas, gasoline from natural 187 Gas and construction for 187 Gas manufacture, by-products. Gas mixtures and electric sparks Gas store lighting device 193 Gas turbine, the 47 Gases, action of, on iron and steel 187 Gases from mine fires, explosibility 37 Gases, the "noble" 378 Gas-filled lamps, photometry of 323	Incandescent lamp, a high efficiency

Inversions of temperature and	Military small arms, develop-	Photometry, flame standards	9	Temperatures (ocean) and ice-
Investigation of leather 54	Military telescopes and binocu-	Photometry of gas-filled lamp, 32	Salts, soil-colloids and soils 23	Temple (Sun) Mesa Verde
Inventions free to the public 47 Imitation as pioneer of genuine 121 Illumination and light,	Militarism, industrial 150 Milk, boiled and pasteurized 131	Physical and mechanical fac-	Sand blast, files sharpening 7. Sand filters	Test of clean milk production. 2
I, 194; II, 218 Illuminations, war*148	Milk, clean production test 27 Milk, pasteurized 165	phase boundariesI, 18; II, 4: Physical fitness, test of 32:	Sawdust, new use for 22: Saving sinking ships 10: Scenery (stage) freproofing 5:	Textile fiber, kapok a new 111 Textile industry paper
Iron, transformation of pure 6 Irrigation system, ancient Mes-	Mines submarine detenation *253	Physician and weather bureau. 178 Physiognomy, ancient prin-	School spread of contagious	Anermal matrument for current
opotamia	Mining coal, new method of *12	Pictures, wild animals taking	. Science (modern) and war	Throwing bombs from airships % 10 Throwing liquid fire
Iron, corrosion of	tions in the war*52	Piping systems, underground	Solonge the reform of the man	
Iron and steel, action of gases on	Modern concrete structures*161 Modern engineering education, our	And electrolysis	Screw propeller*15	and geodetic survey 39: Timber, artificial seasoning of . 39: Timber (ship) making on Pa-
	Modern science and war sur- gery*116	Plant, fuel supply of big power *193 Plant chemistry, notes on 315	Sea, signaling at	Tortoise-shell divination 5
J	Moon, meteorology of the*188 Motor, alternating current sin- gle-phase induction*92	Plants, inner life of some com- mon	Seasoning of timber, artificial. 398	Tracing sloth and lab
Japan, industrial development of	Motor truck rims, fitting 51 Motor vehicles, special steels 366	Preumatic massage 276	Sewer at San Antonio, concrete *161 Shaking hands, danger in 385	Tractors, farm
w	Motors, protecting against dust 139 Motors, varieties of electric 249 Mountain gun and mule team*372	Poisoning, arsenic, a case of 408 Poisons, mineral and alkaloid in water; detecting 5	Shelis, cast iron for explosive 55 Shells, consumption of 91 Shells, high-explosive 201	Trademarks in American re-
Kapok; a new textile fiber*113	Mountain railways, cost of 281 Muclage for paraffin paper 101	Polishing metal with clay 381 Pollution of the air, unnoticed 169	Shells used by different nations 342	from Sweden to Denmark *277
King of elephants, the*225	Municipality, application of chemistry by the 198	Polariscope, sodium lamps for. 174 Portland cement slag and blast furnace slag	Ship propulsion, future of 314	Transformation of pure iron 6
tric	Munitions profits	Concrete	Coast 256 Ships' forms, calculation for 182	Trees, our largest
L	Museums as aids to forestry 297 Music, Indian	Potash deposits in India 47 Potash, possible sources of in	Ships, saving sinking 101 Shoal water corals 318	Trenches, winter in the
Laboratory furnaces, gas burner	Mysteries of matter 114	Potash in Spain	Sickness, symptoms and cure of aviation	Trees and how they heal their
Lamps used in photometry 222 Lamp, man his own electric 341	N	Power from tidal currents in Bay of Fundy	Signaling among the ancients. 154 Signaling at #ea	wounds*53
Lamp, photometry of gas-filled 323 Lamp with unconsumed elec-	Nature study in agriculture 22 Nautical and navigation astron-	Powers (water) of Canada *49	Simplex calendar	Truck troubles, electric
trodes	omy*396 Naval (U. S.) engineering experiment station*72	Power for aeroplanes, steam 350 Power, noise means loss of 340 Powerhouse management 16	Slush castings 46 Smoke, effect of on trees 3	Tubes, torpedo *149 Tube, a safe X-ray 64 Turbine blading 213
Latent heat of fusion of ice 116	Naval and coast defense guns, large *241	Power resources of Russia 19 Precious stones industry in		Turbines, the gas
Law, the periodic	Navy Yard wind tunnel, Wash-	U. S 207 Preparation, some of the essen-	Snowfall, region of the great- est*81	Tunnel (wind) Washington
Leather investigation 54	Navy, engineering in 246	tials in	Soap bubble, remarkable 379 Sodium lamp for polariscope 174 Soil-colloids, salts and soil 234	Navy Yard*2299 Tunnel, longest railway in America*145
Length, English measures of 125 Lenses, heat screen for 99	Nebula hypothesis, the fallacy of the	ous gearing*389 Profits in munitions 99	Soils, nitrogen problem in acid 23 Solar king—Jupiter 219	Turquoise, the
Life (inner) of some common plants	Nickel steels, invar and related 383 Nitrogen: its virtues and vices 394	Propulsion, future of ship 314 Proteins and carbohydrates 226	Soldiers, spectacled 253 Solids, chemistry of amor- phous 382	U
Life processes and the calori- meter 171	Nitrogen monopoly, proposed German	Printing, negatives for 291 Protection of live stock in fields	Soudan, Anglo-Egyptian, early history	Underground piping systems
Life, extension of human 291 Light and illumination, I, 194; II, 218	Nitrogen problem in arid soils 23 Nitrogen value in chemistry 378 "Noble" gases, the 378	against lightning 99 Prothetic apparatus for cripples	Sparks (electric) and explosive gas mixtures*227 Special steels	and electrolysis
Light, reactions caused by 214 Light on plants, effect of*204	Noise of a bullet	Propeller, the screw*158 Protection against lightning 185	Species, extinction of 293 Specificity of proteins and car-	ments
Lighthouse, moving a	Noise, energy consumed in fighting	Protective coating for small articles	bohydrates	U. S. naval engineering experiment station*72
Lightning, protection against 185 Limestone, quality of, for burn-	Nozzles, air flow through 197	Protective coatings for metals. 7 Psychological analysis of stut-	ganisms	v
ing	0	tering	Spot (blind) of the eye*286 Spots before the eyes 153 Stability, aeroplane 320	Vacuum pump, a simple*197
Lines, "Pupinized" telephone 359 Linen for steamships, clean 156	Oak in France, use of 377 Ocean temperatures and ice-	Purification of water, the 406 Pump, a simple vacuum*197	Stage scenery, fireproofing 51 Stammering, its own explana-	Value gems, how to
Liquids and suspensions, drop measuring method 399 Liquids, extinguishing burning. 171	bergs	"Pupinized" telephone lines359	Station, U. S. naval engineering experiment	Varnish troubles
Locating bullets in human bodies*369	Oil fields, the Gulf	Q	Steam power for aeropianes350 Steam turbines	Vegetables, boiling losses and changes
Live stock in fields, and light-	fornia	Quenching, deformation of steel on 246	Steamships, clean linen for 156 Steel castings, "ghost lines" in large	Viaduct, Lethbridge, Alberta. *257
Lacomotives new idea in elec-	crete	R	Steel and iron, action of gases	Ottawa*232
tric	I, 50; II, 74 Oil fuel, sub-aqueous, storage	Radiation from atoms and elec-	on	Visibility of distant objects in
Long-heads, square-heads, short-	of	trons, I, *290; 11, *306; 111, *322; 1V, *338; V, *354; V1, *370 Radio-active substances in air	Steel, manufactures of commer-	warfare 371
heads	Oil, peanut	and fog	Steel (mild) reagent for etching	Walking, energy transforma-
Lutes and cements 278	tion	Radium, injuries due to 254 Radium, Japanese	on quenching	
M	Operation of electric railway.	Railroad, early days of the 139 Railroad, lost business when. 75 Railroad viaduct, Lethbridge,	Steels, special for motor vehicles	war, alcohol in
operating	successful	Alberta	Storage of oil fuel, sub-aqueous 176	War, searchlighte in 69
Machines (great) in ore unload- ing*97 Magnetic fields and electric	Ore deposits, electric activity in, I, 14; II, 31	Railway gage comparison 55 Railway tunnel, longest in	Straw fiber, bags from 341 Structure of the atom.I, 82; II, 102 Structure of the earth,	War Zeppelin, the
Magneto ignition vs. battery 128	Lakes*97 Oscillograph, a lecture-room*412	America	Structures, modern concrete*161	Washing locomotive smoke *61
Magnets, great electro, I, *300; II, *316 Making roads and men*408	Oxy-acetylene welding , practice 202	Rain, artificial	Struts, aeroplane*293 Study, economy in, I, 242; II, 274; III, 330; IV, 374	Waste in eggs, reducing our*292 Waste pine wood utilization 27 Water and mercury, oil films
Mammals of South America, armored*157	. P	Rat-fleas and rat-trypanosomes 52 Reagent for etching mild steel 238	Stuttering, psychological analysis of	water supply, unexpected301
Man his own electric lamp 341 Mantles (gas) and thorium 327 Marine disaster on the coast of	Paint baking on steel cars 391	Reducing our waste in eggs*291 Refining copper in 1914 151 Refraction and accommodation	Submarine, periscope of 135	Weather bureau and the phy-
China 413	Paint, removing from wood 333 Painting, prevention of rust by 197 Paper, coating for blue print*333	in the dog's eye 357 Region of the greatest snow-	Submarine, present condition of 112 Sulphur on cast iron, effects of 323 Sulphur in steel, how much? 68	Weights and measures, Chinese 198 Wells more than mile deep. 184
Massage, pneumatic	Paper from grapevines 80 Paper (India) Oxford 149	fall *81 Reinforced aluminium electric cables 68 Rennerfelt electric furnace *332	Sun temple, Mesa Verde Park. *305 Sunlight and health	Welding practice, oxy-acety- lene
Mechanian against meterial in	Paper textile industry 247 Park, New York Zoological*353 Park, National Zoological at	Repelling attacks of aircraft *17	Surface combustion*348 Surface tension at the interface between two liquids*235	Winter in the trenches *385
Mechanism of a dream 390 Mechanism of protection against	Washington*216 Parks, some noted zoological,	Reptiles (monster extinct) at National Museum*33 Research, importance of geo-	Surgery (war) and modern science	Wireless for motorboats 411 Wireless telephone set *36
bacterial infection 304 Mechanotherapy at home *381	Pasteurized milk	graphicalI, 146; II, 170 Respirators, anti-chlor *75 Restoration of Ceratosaurus	Survey, U. S. coast and geo- detic, and commerce	Wind tunnel, Washington Navy Yard **229 Wild animals taking their own
Medicines of ancient Romans. 391	Paradox, an anemometric*108	Nasicornis 187 Restorations of monster rep-	detic and oceanic tides 398 Sweden to Denmark, transmis-	Wind motor and wind direction*108
Melbourne Zoological Gardens, 129 Mendeleieff's table, periodic	Patents that expired in 1915. 47 Patient or "case"?	tiles at National Museum *33 Retorts, vertical gas 372 Revolutionist and the loco-	sion of electric energy*377 Sweet clover	Wood for golf clubs
law	Peat, utilization of 233 Perfumes, manufacture of syn-	Rice bread	sickness	World's largest electric kitchen* 180
Mercury, simple process for purifying	Periodic law, the	Rifle, aiming with the*124 Rifle fire	System of cutting gears, new*101 System of navigation and nau- tical astronomy*396	Wound treatment and garlic juice
Mesopotamia, ancient	Periscope of the submarine 133	Rifle, military	tical astronomy	Wounds simple dressing for
Metal, testing hardness of 186 Metals, action of acetylene on 11	Petroleum in Galicia, decrease of	Rifles, breech mechanism for 321 Rigid, semi-rigid, and non- rigid airships		Wounded, what is done for the *196 Woods of Hawaii
Metals, metastability of 59	Petroleum oils, improvement of	Rims, fitting motor truck 51 Roads (good) and automobile *376	T	Wood, removing paint from 233
ancient Peruvian bronzes 142	Phenomena of moving automo-	Roads, oiling on earth	Tactics in air fighting 39 Teaching scientific forestry*289 Telegraph engineers and field	Wood surfaces, finishing 170 Wood older than the hills*155
Metastability of metals 59 Meteorology of the moon*188	bile wheel	Rods, collapse of cylindrical 261 Romans, medicines used by	cables*276 Telegraph codes of the world, 266	. x
field64 Mica*284	Phosphorescent calcium sul-	Röntgen ray in locating bullets *369 Rubber manufacture, dangers	Telephony (radio) limitations and possibilities of 155 Telephoning from the body \$5	X-ray tube, a safe 64
Microscope artificial daylight for	Photo-chemistry 214	Rust-proofing process 281	Telephone set, wireless *36	z
Military aeroplane development	lems	of	Telescopes and binoculars, mili- tary *340	Zeppelin airships
Military rifle	ical solutions in	Russia's power resources 19 Rust prevention by painting 197 Rust removing from nickel 211	Temperature inversions in relation to frost	Zoological parks, New York*353 Zoological parks, some noted, *8, *129, *216
			The state of the s	300

**197
**334
**334
**335
**362
**362
**362
**362
**362
**362
**362
**362
**362
**362
**362
**363
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371
**371

1